

Amendments to the Claims

Please add new Claims 43-57.

43. (New) A method for recycling a chosen gas used in a medical procedure, comprising:
a) retrieving a gas mixture from a first patient, wherein said gas mixture includes said chosen gas;
b) inserting said gas mixture into a recycling device;
c) passing the gas mixture through a dryer unit to remove water vapor from the gas mixture;
d) passing the gas mixture through a getter to remove non-chosen gasses in the gas mixture, wherein only the chosen gas remains;
e) storing the chosen gas for later use;
f) removing the chosen gas from storage;
g) transferring the chosen gas to a cell, wherein it is prepared for delivery to a second patient; and
h) supplying the gas prepared in step g) to said second patient.
44. (New) The method of claim 43, wherein said medical procedure is diagnostic MRI; said chosen gas is a noble gas; and wherein, after recovery, said noble gas is prepared for delivery to said second patient in step g) by putting it in a hyperpolarized state.
45. (New) The method of claim 43, wherein said chosen gas is selected from the group consisting of: an isotope of Xe; an isotope of He; ^{31}P ; ^{13}C ; ^{23}Na ; and ^{19}F .
46. (New) A device for recycling a chosen gas, comprising:
a) a first portable container (102) connected to a first end of a first gas line;
b) a vacuum pump (106), connected to the second end of said first gas line;
c) a getter (112), connected to said vacuum pump;
d) a storage container (118), connected to said getter and to a first end of a second gas line;
e) a mass flow controller (120) for regulating the amount of said gas that flows from said storage container and which is connected to the second end of said second gas line;
f) a purifier (122) connected to said mass flow controller;

g) a cell (126) for preparing said gas for delivery to a patient and connected to said purifier; and

h) a second portable container (124) for receiving hyperpolarized noble gas from said cell.

47. (New) The device of claim 46, wherein said gas is prepared for delivery to a patient in step g) by putting said gas into a hyperpolarized state.

48. (New) The device of claim 46, further comprising:

a) a dryer (108) connected to said vacuum pump; and

b) a second purifier (110) connected to said dryer (108) and to said getter (112).

49. (New) The device of claim 48, further comprising a sanitizer (131) for sterilizing gas, said sanitizer being connected to said getter (112) and to said storage tank (118).

50. (New) The device of claim 49, further comprising a compressor (116) connected to said getter (116) and to said storage tank.

51. (New) The device of claim 50, further comprising:

a) a surge tank (104) connected to said first portable container (102) and to said vacuum pump (106); and

b) a valve (114) for introducing additional noble gas into said storage tank (118), said valve being connected to said sanitizer (131) and to said compressor (116).

52. (New) The device of claim 51, further comprising a second a second storage tank (130) that may be used to mix additional gasses with said noble gas prior to hyperpolarization, said second storage tank being connected to said purifier (122) and to said mass flow controller (120).

53. (New) A method of recycling a chosen gas comprising introducing an impure mixture of said chosen gas into the device of any one of claims 46-52.

54. (New) The method of claim 53, wherein said chosen gas is a noble gas.

55. (New) The method of claim 53, wherein said chosen gas is selected from the group consisting of: an isotope of Xe; an isotope of He; ^{31}P ; ^{13}C ; ^{23}Na ; and ^{19}F .
56. (New) An MRI imaging machine comprising a device for recycling a chosen gas comprising:
- a) means for recycling a mixture of gases containing said chosen gas and introducing said mixture of gases into said device;
 - b) means for propelling the gases introduced in step a) through said device;
 - c) means for purifying chosen gas as it is propelled through said device;
 - d) means for storing chosen gas purified by the means of step c);
 - e) means for removing chosen gas from the storage means of step d) and for regulating the amount of gas that flows from said storage means;
 - f) means for transforming gas that has been removed from the storage means of step d) into a state for delivery to a patient; and
 - g) means for transferring the gas prepared in step f) out of said device.
57. (New) The MRI machine of claim 56, wherein said chosen gas is a noble gas that is transformed into a state for delivery to a patient by putting it into a hyperpolarized state.